

TBO-AID: Trajectory-Based Operations Adaptive Information Display, Phase I

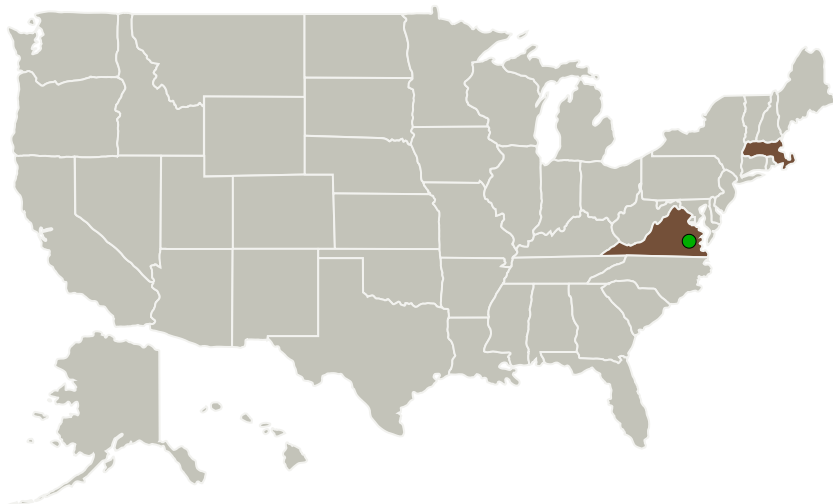
Completed Technology Project (2011 - 2011)



Project Introduction

Trajectory-based operations (TBO) are at the forefront of the Next Generation Air Traffic Management System (NextGen). The vision of NextGen is one in which pilots will be responsible for following 4-dimensional (4D) trajectories while maintaining separation from other aircraft and weather. Ongoing research focuses heavily on the infrastructure and procedures required to conduct 4D TBO; however, new flight deck displays are going to be needed to support pilots who will be faced with the challenge of making more complex, strategic decisions than are required in current-day operations. In response to this challenge, Aptima proposes to develop a Trajectory-Based Operations Adaptive Information Display (TBO-AID). TBO-AID will incorporate innovative display techniques that address the (1) unique information needs associated with conducting 4D operations (e.g., crossing a specific navigation fix at a specific time); (2) uncertainty and risk associated with weather and mixed-equipage conditions, key challenges for conducting 4D TBO; (3) potential advantages gained through multimodal information presentation; and (4) need for model-based, situationally aware display adaptation to support information processing and decision making. Anticipated results of commercializing this effort include increasing the safety and efficiency of air traffic and expanding the maximum number of aircraft potentially in flight at a given time.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Aptima, Inc.	Lead Organization	Industry	Woburn, Massachusetts
● Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

Primary U.S. Work Locations	
Massachusetts	Virginia

Project Transitions

February 2011: Project Start

September 2011: Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/137457>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Aptima, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

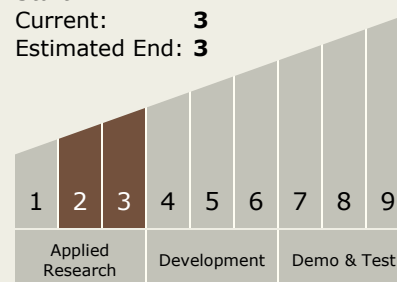
Carlos Torrez

Principal Investigator:

Amy R Alexander

Technology Maturity (TRL)

Start: 2
Current: 3
Estimated End: 3



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Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
 - └ TX16.3 Traffic Management Concepts

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System